- (1) The following statement has been prepared by me, Paul Lawless, and is based upon my personal review of the geologic data presented herein.
- (2) I am is currently employed by Helis Oil & Gas Company, L.L.C. (Helis) where I serve as Geologic Manager for Unconventional Resources overseeing geoscientists employed by Helis in various oil and gas exploration and production areas within the United States. I hold both Bachelor and Master of Science Degrees in Geology from Louisiana State University and I have over 25 years' experience in the oil and gas industry. I have extensive experience in managing geologic investigations relating to unconventional operations including the horizontal drilling and hydraulic fracturing of formations similar to that which may occur in Phase 2 of the St. Tammany Project if the geologic data collected during Phase 1 is favorable.
- (3) The Tuscaloosa Marine Shale (TMS) is an unconventional resource play for the Upper Cretaceous source rock in Louisiana and Mississippi. Because of elevated temperatures and pressures in the subsurface, the TMS has been generating hydrocarbons in the geologic past and is currently generating hydrocarbons today. The Upper Cretaceous TMS hydrocarbon source rock is thought to be the source for many of the Lower and Upper Tuscaloosa and Lower Tertiary sandstone conventional reservoirs in the immediate area and for many miles up dip as the oil and gas has migrated from its generative source area to up dip traps and ultimately the surface of the Earth. Hydrocarbon generation has slightly geopressured the section, giving the TMS one of the optimal reservoir drive conditions for the potential development of an economic resource play. A permeability requirement would be to find diagenetic, lithologic or natural fractured conditions that would improve the very low permeability that naturally exists in shales in order for a horizontally drilled and hydraulically fractured well to deliver economic flow rates. Within the TMS there are different sweet spots and sub-plays which develop due the various permeability enhancers. Helis' target formation in southern St. Tammany Parish potentially has one of permeability enhancers and is a distinct and separate sub-play within the overall TMS Trend.
- (4) The Helis play in southern St. Tammany Parish, targets an anomaly which we believe is a thick siltstone or sandstone embedded within the generative TMS. This target siltstone formation is best seen in the WAGNER & BROWN Keller Heirs #1 in 12-T8S-R12E of St. Tammany Parish (Figure 1). Of particular interest is the 27 foot thick, 60+ ohm zone in the Keller Heirs well (12,997' to 13,024') which develops a mudcake. Mudcake is a permeability indicator, typically sand or siltstones in South Louisiana, where the solids in drilling mud form an impermeable barrier (mud cake) to prevent the flow of drilling mud into those permeable formations. A number of thinner 2 to 3 foot zones are also seen developing mudcake above our main target zone in the upper portion of the TMS (Figure 1). This very highly resistive siltstone target is seen laterally continuous in a number of wells drilled mostly in the 1970's and 80's for deeper Cretaceous carbonate and Lower Tuscaloosa Sandstone targets in southern St. Tammany Parish (the "Southern control wells"). An East-West cross-section (Figures 2 & 3) running generally along the path of I-12 in southern St. Tammany Parish demonstrates this target zone presence and continuity. Our 27 foot thick, 60 ohm target zone thins and pinches out to the north in the North-South section (Figures 4 & 5). The target zone is only several feet thick in the TENNECO George Kennedy #1 (25-T6S-R13E) which is only 9.5 miles north of



- the wells where the target zone is seen thickest (Figure 5). The only geologic conclusion that can be reached based upon the aforementioned geologic data is that the target zone is limited in areal extent to the southern portion of St. Tammany Parish in the vicinity of the Southern control wells.
- (5) In my independent evaluation of geologic data and correlations and operations of others in the TMS play, the anomaly we are targeting has only been found in southern St. Tammany Parish and is distinctly different from what other operators are playing to the northwest of the proposed Helis well. Because the nearest control wells defining the targeted siltstone are around I-12 in southern St. Tammany Parish and the anomalous target siltstone is seen to thin and pinch-out fairly quickly to the north, Helis focused its drill site selection effort on the area dictated by the existing geologic data and ultimately selected a drill site north of I-12 and out of the Coastal Zone, in the middle of a pulp wood farm, quite a ways from the culture in the area, on the best existing logging road, and next to a gas pipeline for the least environmentally intrusive hook-up. Helis proposes to drill, core and log our proposed well where the target zone is thick enough to definitively test our siltstone target in order to understand the various reservoir properties necessary to warrant the drilling and testing of a horizontal well.
- (6) I participated in the July 29, 2014 Geological Review and presented the geologic data referenced in this statement to John Johnston, the State Geologist conducting the review prior to Mr. Johnston making his recommendations regarding the proposed Helis well. At the conclusion of the Geological Review, Mr. Johnston issued the recommendation that there are, "No less damaging feasible alternatives" to the proposed Helis drill site. (See, Exhibit A attached hereto)
- (7) In connection with the St. Tammany project, I have also reviewed available geologic and geophysical data of the subsurface within a minimum of 3 (three) miles from the proposed Helis well and have found no evidence of shallow faulting. I likewise have found no evidence of mineral induced subsidence in St. Tammany Parish and any alleged risk from subsidence posed by the possible extraction of minerals within the target zone over 2 (two) miles below the earth's is surface is insignificant because of the highly compacted and well lithified characteristic of the Cretaceous target zone as compared to the Miocene and younger formations produced farther to the South.

Paul N. Lawless (12/30/14)

Wagner & Brown Keller Heirs #1 17-103-20035 TD = 15,962' MD 12-T8S-R12E

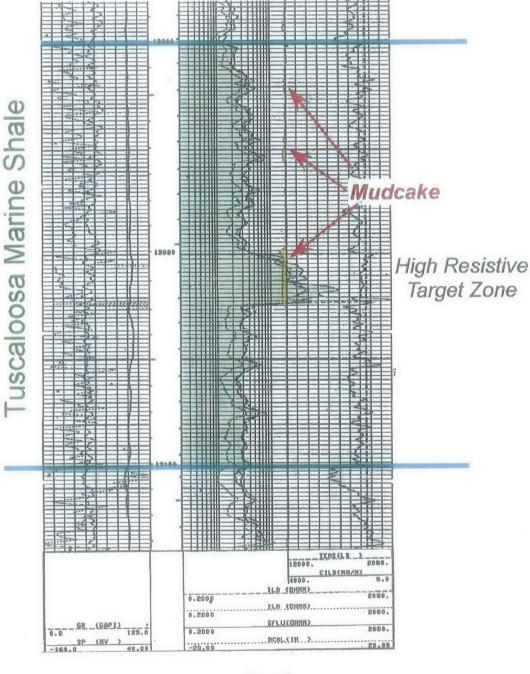
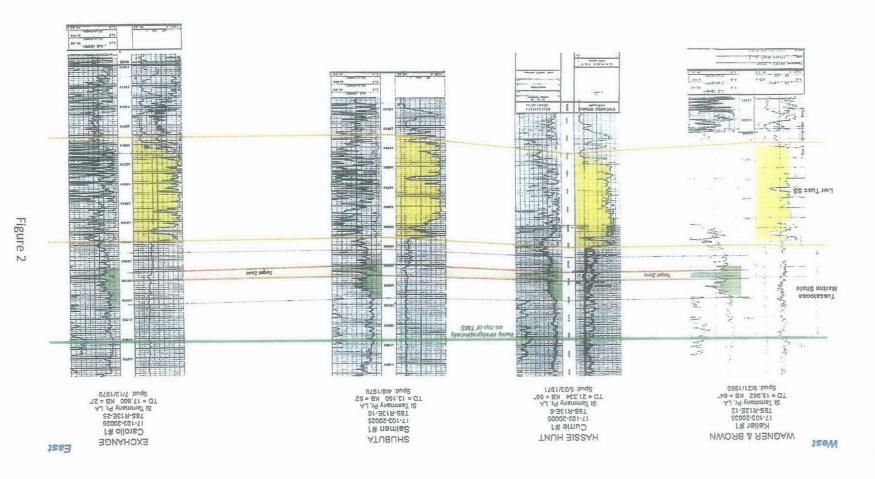
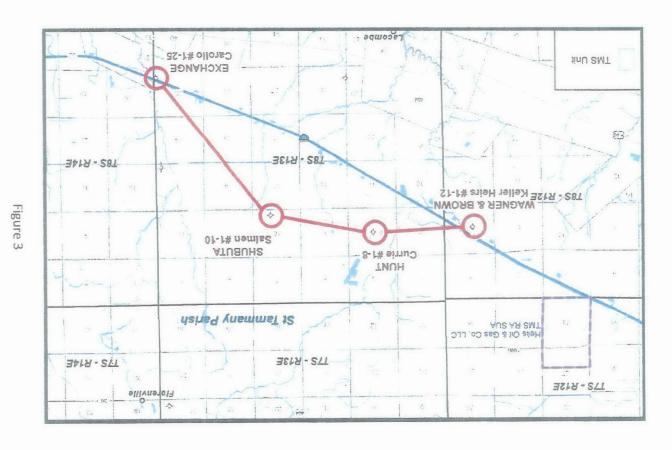


Figure 1





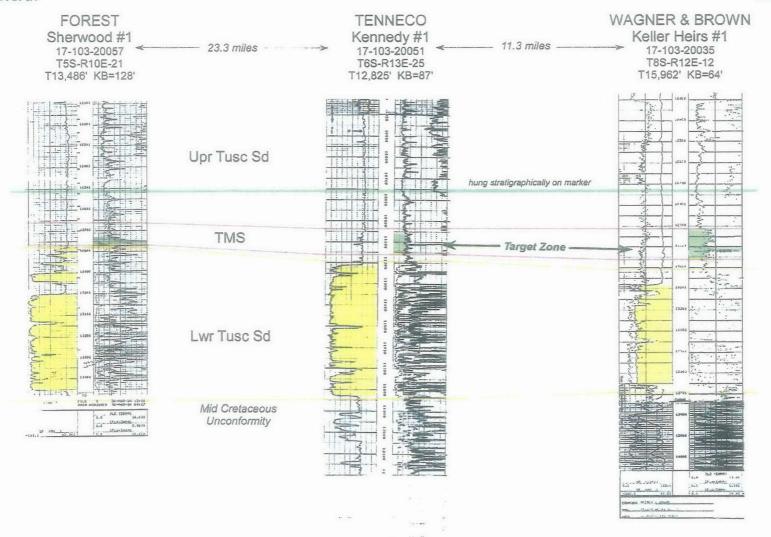


Figure 5

3C18 261 4 TAS RIZE THE RIVE 381A 26T JinU SMT 4 8 II9W gnioubor9 2MT Keller Heirs #1-12 381 R13E 36A 28T 3819 281 351A 281 WAGNER & BROWN 0 0 378 28T TRSRIVE 4 175 R9E TIS RRE TYSRITE 301A 217 318 21T BEIR TT P TPS R12E TYSRISE TYS RIVE 8 5/1 WTIRRIT St Tammany Parish 3 0 R 201 ⇒ BBR 28T 31A 20T TES RIVE T6S R10E 36A 23T 3119 201 165 R12E WEIR EST Kennedy #1-25 A 201 TENNECO Tangipahoa Parish 3 36A 22T -3 -0-T65 R8E 318 281 311 A 26T TSS R12E TES RIBE A 221 WELR BET W818221 1 Sherwood #1-21 FOREST TAS RAZE Conuty T45 R13E BEFR 24T 3019 24T Pearl River 31A 2AT 36A 241 TAS RBE WELA 211 74S R TAS RITW 745 R13E TAS RIZE 00 \$ TAS RITE 0 **145 R108** XX Washington Parish 00 388 2CT **368 227** WAIR SET 31A 251 gira ect **3019 25T** 135 R 735 R12E क्षराम रहा T3S R13E BER SET